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(71) Applicant (for all designated States except US): **AZEA NETWORKS LIMITED** [GB/GB]; Bates House, 151 Church Road, Harold Wood, Romford, Essex RM3 0SD (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **OBERLAND, Richard** [GB/GB]; 19 Crockham Way, Eltham, London SE9 3HD (GB).

(74) Agent: **GILL JENNINGS & EVERY**; Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).

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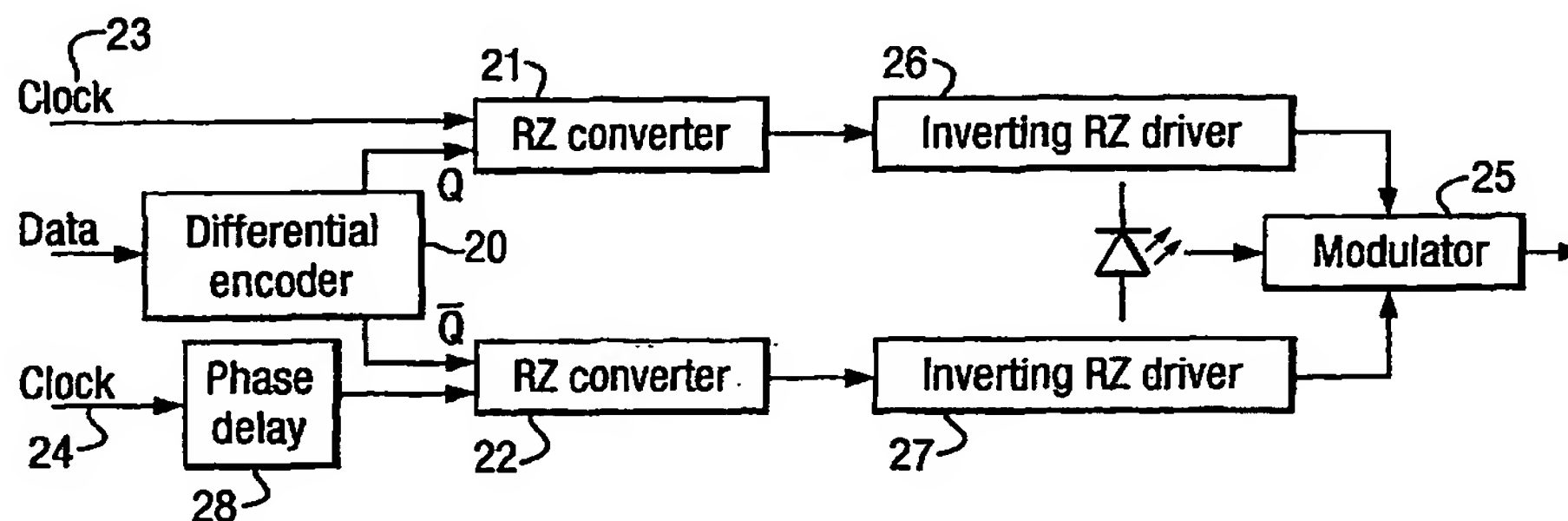
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(54) Title: METHOD AND APPARATUS FOR PRODUCING RZ-DPSK MODULATED OPTICAL SIGNALS



(57) Abstract: The invention provides an optical transmitter comprising a differential encoder having first and second outputs, the first and second outputs being of opposite polarity to one another, a first RZ converter connected to the first output of the differential encoder and a second RZ converter connected to the second output of the differential encoder, and a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled, wherein the output of the first RZ converter is connected to a first electrode of the Mach Zehnder modulator and the output of the second RZ converter is connected to a second electrode of the Mach Zehnder modulator. The invention provides improved signal integrity as compared with existing RZ-DPSK solution through the use of high quality RZ drivers. Furthermore, the invention gives rise to controllable RZ pulse edge chirping, providing rapid pulse compression or broadening through a dispersive fibre length. This can be used to mitigate pulse distortion in non-linear transmission links.